ABSTRACT OF THE DISCLOSURE

MANUFACTURING PROCESS FOR A HIGH STRENGTH WORK HARDENED PRODUCT MADE OF ALZNMGCU ALLOY

The purpose of the invention is a process for the manufacture of a work-hardened product made of a high mechanical strength Al-Zn-Mg-Cu aluminium alloy consisting of:

- casting an ingot made of an alloy with composition (% by weight) Zn = 9.0 - 11.0, Mg = 1.8 - 3.0; Cu = 1.2 - 2.6 at least one of the elements Mn (0.05 - 0.4), Cr (0.05 - 0.3), Zr (0.05 - 0.20), Hf (0.05 - 0.5), V (0.05 - 0.3), Ti (0.01 - 0.2) and Sc (0.05 - 0.3), the remainder being made of aluminium and inevitable impurities,
- possibly homogenisation of said ingot,
- hot transformation of said ingot by rolling, extrusion or forging,
- solution heat treatment and quenching of the product obtained,
- possibly controlled stretching with a permanent set between 1 and 5%,
- annealing of the product at a temperature and with a duration such that the product reaches the maximum compression yield stress in the L direction.

The invention is applicable particularly to upper wing members of aircrafts.

Figure 2

Légende des figures

Français	Anglais
Seuil CSC	CSC threshold
Température (°C)	Temperature (°C)
Durée de revenu (h)	Annealing duration (h)
Mono-palier	Single step
Bi-palier	Two-step
Temps équivalent de revenu à 120°C (h)	Equivalent annealing time at 120°C (h)
Temps équivalent à 120°C (h)	Equivalent time at 120°C (h)
Tri-palier A	Three-step A
Tri-palier B	Three-step B
Temps équivalent de revenu à 120°C (h)	Equivalent annealing time at 120°C (h)